



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,722	07/27/2006	Andrew Ian Cooper	T3110(C)	2308

201 7590 11/25/2009  
UNILEVER PATENT GROUP  
800 SYLVAN AVENUE  
AG West S. Wing  
ENGLEWOOD CLIFFS, NJ 07632-3100

EXAMINER
----------

ALAWADI, SARAH

ART UNIT	PAPER NUMBER
----------	--------------

1619

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

11/25/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentgroupus@unilever.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/587,722	<b>Applicant(s)</b> COOPER ET AL.	
	<b>Examiner</b> SARAH AL-AWADI	<b>Art Unit</b> 1619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 8-20 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Receipt is acknowledged of Applicants amendments and remarks filed on 06/11/2009.

The Examiner acknowledges the following:

Claim 1 has been amended to include the limitation wherein said porous bodies dissolves or disperses in non aqueous media in less than three minutes.

Claims 21-22 are newly added claims.

### **RESTRICTION ELECTION**

Applicant's election of Group I in the reply filed on 06/11/2009 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 8-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention. Currently, claims 1-7 and 21-22 are under Examination as being drawn to a composition.

### **INFORMATION DISCLOSURE STATEMENT**

No new Information Disclosure Statements have been submitted for consideration.

### **PRIORITY**

The claim to foreign priority under 35 USC 119 is acknowledged for Application number 0401947.7 filed January 24<sup>th</sup> 2004.

## **WITHDRAWN REJECTIONS**

### Double Patenting

Claims 1-2 and 5-7 were rejected on the ground of nonstatutory obviousness-type double patenting over Application No. 10/587732. Applicants have submitted a terminal disclaimer and appropriate fee which has been approved, therefore said rejection is hereby **withdrawn**.

## **MAINTAINED REJECTIONS**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-7 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Barby et al. United States Patent 4522953.**

Claim 1 recites a composition of porous bodies which are soluble in non-aqueous media comprising a three dimensional open-cell lattice containing 10-95% by weight of a polymeric material which is soluble in hydrophobic or water immiscible non-aqueous media and 5 to 90%

Art Unit: 1619

by weight of a surfactant, said porous bodies having an intrusion volume as measured by mercury porosimetry of at least 3ml/g.

Reference '953 discloses porous bodies such as porous polymeric materials and a level of surfactant that ensures adequate absorbtivity. (abstract). The polymer material of the invention can consist of at least 90% by weight (column 2, lines 60-63) and the polymer material can be made of lightly cross-linked polystyrene. The porous bodies can contain an aqueous or non-aqueous liquid. (claim 3) The liquid can be hydrophobic (claim1) and the porous polymeric block material is formed from a water in-oil emulsion. The optimum concentration of surfactant by monomers is 20%. (column 5, lines 65-67) The structure can be a three dimensional open-cell lattice because reference '953 teaches that porous polymer beads can be compressed and bonded together, and that the interior of the blocks is homogenous and that blocks are uniform in pore and cavity distribution. (column 3 and 4, lines 67 and line 1-5) Furthermore regarding claims 1 and 2, the porous blocks can be in any desired shape, and does not restrict the process to containers in which agglomeration of beads under pressure can be carried out, thus can include the process of forming beads. (column 6, lines 31-35) Reference '953 teaches that the porous polymeric material can have a dry density of between 0.02 to 0.08g/cc (or ml/g) comprising linked pores having a pore volume of more than 9cc/g ( 9ml/g) and contained in an aqueous or non-aqueous media. (column 2, lines 54-59) This anticipates the claimed intrusion volume range of at least 3 ml/g.

Claim 3 recites that the porous bodies as claimed in claim 1 are made of polymeric material wherein the homopolymer or copolymer is made from monomes such as styrenics, and claim 4 recites that the polymeric material is either polystyrene or polyvinyl acetate. Reference

Art Unit: 1619

'953 teaches that the polymer material can be made of lightly cross-linked polystyrene. (column 5, lines 3-5) This is a type of styrenic as defined by the instant specification page 2, line 2.

Claim 5 recites that the porous bodies as claimed in claim 1 have water soluble and/or water insoluble materials incorporated. An example that is recited in claim 6 of a soluble material is water soluble polymers, and claim 7 recites that an example of water insoluble materials can be that of hydrophobic polymeric materials. Reference '953 teaches the use of hydrophilic and hydrophobic polymer materials because there is an internal phase emulsion present, where in the continuous phase the monomer and surfactants, and the internal phase comprises water. (column 3, lines 36-40) The title of the invention is porous cross- linked polymeric materials and their use as carriers for included liquids. To carry included liquids such as water which is disclosed in the patent, it is inherent that the polymer must comprise of hydrophilic block portions and hydrophobic blocks.

**Claims 1-7 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Kitagawa, Naotaka PCT/ US98/12797 as cited on IDS form filed 08/23/2006.**

Claim 1 and 2 recites a composition of porous bodies (that can be in the form of beads) which are soluble in non-aqueous media comprising a three dimensional open-cell lattice containing 10-95% by weight of a polymeric material which is soluble in hydrophobic or water immiscible non-aqueous media and 5 to 90% by weight of a surfactant, said porous bodies having an intrusion volume as measured by mercury porosimetry of at least 3ml/g.

Art Unit: 1619

Reference '797 teaches the production of porous crosslinked hydrophilic polymeric microbeads wherein at least 10% are spherical and the polymeric material is 30 % by weight of the emulsion. (page 4, line 19, and line 28, and page 14, line 14) The invention consists of 50% of the total polymerizable monomer that are hydrophilic. (page 5 line 30) Furthermore, a single monomer or mixture of types can be used in the emulsion such as hydrophilic and hydrophobic monomers. Nonionic surfactants may be present as a type of emulsifier in an amount of 1 to about 30 wt. percent. (page 16 lines 15-17 and page 17, lines 1-4) The fact that the porous bodies have a mercury porosimetry of at least 3 ml/g is an intended property of the composition.

Example 30 of reference '797 teaches the use of an alcohol (non-aqueous) containing emulsion.

Regarding instant claims 3 and 4, reference '797 teaches an example of porous bodies that contain polystyrene/divinylbenzene which is a type of styrenic.

Claim 5 recites that the porous bodies have water soluble and water insoluble materials incorporated within. Reference '797 teaches that a single monomer or mixture of types can be used in the emulsion such as hydrophilic and hydrophobic monomers. (page 14, lines 3-12) The composition can include suitable stabilizers such as polyethylene glycol which is a soluble material. (page 17, lines 24-31) The hydrophilic porous bodies can be used as carriers to provide sustained release of an agent such as fragrance, insecticides or a cosmetic. (page 28, lines 31-34)

### **RESPONSE TO REMARKS**

Regarding the rejections over and Barby and Kitagawa, Applicants argue that their invention forms an emulsion of water in a water immiscible liquid which contains a preformed

Art Unit: 1619

polymer which is soluble in the water immiscible liquid. The emulsion is frozen using a fluid freezing medium which cools both phases of the emulsion to below freezing point of the liquids in the emulsion. Finally the emulsion is freeze dried to remove the frozen water and a water immiscible liquid by sublimation, thus in applicant's method the oil soluble polymer is already formed before the preparation of the porous bodies and no polymerization takes place during the preparation of the porous body.

In response to applicant's argument that the references fail to show certain features of applicant's invention, the Examiner respectfully submits that it is noted that the features upon which applicant relies (i.e. the method of making the porous bodies absent polymerization) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Secondly, Applicants argue that both references teach cross-linked polymers and that cross linked polymers have low solubility, and do not dissolve, but swell when interacting with a solvent. Applicants argue that the porous materials disclosed by Barby and Kitagawa are cross-linked polymers and are incapable of dissolving or dispersing when contacted with non aqueous media in less than three minutes and are not comprised of a three dimensional open cell lattice comprised of a polymeric material which is soluble in water immiscible non-aqueous media.

In response, the Examiner respectfully submits that the claim recites dissolves or disperses. It does not recite that it has to completely dissolve or under what conditions. If the body is even somewhat soluble or dispersible, some will dissolve or disperse. Absent evidence to the contrary, if the porous bodies of the art were placed in the proper medium and heated or



Art Unit: 1619

agitated, it is an expected property that a portion will dissolve. Furthermore, the Polymer Science Textbook submitted by Applicants teaches that solubility varies depending on the degree of cross-linking and nature of the solvent or temperature, and that the absence of solubility does not imply crosslinking. Furthermore, absent any conditions for dissolving/dispersing of the porous body, the rate of the dissolving is a property of the composition as it is expected that even just a fraction of the bodies will dissolve in less than thirty seconds with appropriate mixing as the claim does not specify that it has to completely dissolve. Thus, absent evidence to the contrary it is expected that a small portion of the porous bodies dissolve under appropriate conditions and that even a portion would necessarily dissolve in less than thirty seconds as a mixture is occurring.

Secondly, regarding the amended limitations, Applicant recites dissolves or disperses as alternatives. The definition of disperse is to scatter. (<http://www.merriam-webster.com/dictionary/DISPERSE>) As the claim recites the porous bodies dissolve or disperse, and the definition of disperse is to scatter, the mixing of porous bodies with a non-aqueous media by agitation or even heating would necessarily scatter the particles which reads on the claim. Therefore, Applicant's arguments and newly amended limitations are not persuasive as the art of record still reads on the newly added limitations of claims 1 and 21 for the reasons discussed above.

Regarding claim 22, the claim states that the porous bodies as claimed in claim 1 wherein said porous body are made by a process comprising the steps of providing an intimate mixture of polymeric material and surfactant in liquid, providing a fluid freezing medium at a temperature effective for rapidly freezing the liquid medium, cooling the liquid medium with the fluid

Art Unit: 1619

freezing medium at a temperature below the freezing point of the liquid medium for a period effective to freeze the liquid medium, freeze drying the frozen liquid medium to form the porous bodies by removal of the liquid medium by sublimation. The teachings of Barby and Kitagawa encompass porous bodies which are soluble or dispersible in non-aqueous media comprising a three dimensional cell lattice containing polymeric material which is soluble in water immiscible non-aqueous media, and surfactant, wherein the bodies dissolve rapidly (as an expected property). (see the remarks above) Although the reference uses a different process to produce the porous body, Applicant's process could be used to produce a porous body with the same characteristics as the reference porous body. Therefore, applicant's porous body, described in product-by process terms, reasonably appears to encompass porous bodies that are indistinguishable from the reference porous bodies produced by a different process. Since the patent office does not have facilities to perform comparisons between claimed materials and prior art materials, a lesser burden of proof is required to make a prima facie case of obviousness for products claimed in terms of the process used to make them. Therefore, the invention as claimed is seen as prima facie obvious. (see MPEP 2113)

All claims have been rejected; no claims are allowed.

#### CONCLUSION

Applicant's arguments/remarks are unpersuasive. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy

Art Unit: 1619

as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### *Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Al-Awadi whose telephone number is (571) 270-7678. The examiner can normally be reached on 9:30 am - 6:00 pm; M-F (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bonnie Eyler can be reached on (571) 272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

Art Unit: 1619

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SARAH AL-AWADI/  
Examiner, Art Unit 1619

/YVONNE L. EYLER/  
Supervisory Patent Examiner, Art Unit 1619